

System Requirement Specification

Of

ZMUX Business
Operational System

ZMUXBOS

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1.0 Introduction

Zanzibar Multiplex Company (ZMUX) is a government-owned company established under the company decree (CAP 15) in October 2012, and it is operated under the Ministry of Information, Youth, Culture, and Sports. The company is responsible for offering media content through multiplexing technology to the public in Zanzibar at an affordable price and high quality. The production service provided by the company places focuses on how the customer can be satisfied and increase brand awareness, service quality, coverage, scope, and views.

ZMUX seeks to develop the managerial, operational, and service delivery capacity of Zanzibar Multiplexing Company Limited (ZMUX) to increase its market share and performance, thus contributing to the development of a dynamic media sector.

Although the company is currently operating and providing media services to customers, the company faces many infrastructural challenges due to the depreciation of the equipment, infrastructure (headend), and software systems, including the existing billing system. In such a way, the company should take immediate actions to address those challenges; otherwise, they might negatively impact the operations of the company and may lead to financial losses as well as the customer base. The challenges include

- i. Missing contract and Service Level Agreement (SLA) for most of the existing installed equipment and billing system
- ii. Missing user manuals (technical and or tutorial for the end user) for operating equipment and billing system.,
- iii. The existing billing system cannot automatically update the CAS server when the client renews the airtime subscription.
- iv. Integrating the existing billing system/ SMS Pay TV with the government e-payment gateway is impossible as there is no API.

Also, the company aims to add more services to its business operations. For that purpose, they need a new system to accomplish their mission.

1.1 Document Objectives

The purpose of this document is to spell out detailed requirements of the ZMUXBOS, which will cover all business activities of ZMUX. The document will be regarded as a basis of understanding between parties regarding what is required by the client and what will be delivered.

1.2 ZMUXBOS System Objectives.

The main objective of the current project is to establish a web-based integrated information system that will automate ZMUX business operations.

1.3 ZMUXBOS System Scope.

The scope of this system covers but is not limited to the following:

- Design an upgraded solution that can solve identified gaps and meet current ZMUX requirements
- Develop a ZMUXBOS system with the following modules:
 - Customer Module
 - Inventory Module
 - Integration Module
 - Payment Module
 - Inventory Module
 - Packaging Module
 - Sells Module
 - System Security Module
 - Agent Module
 - Customer Care Module
 - Report Module
- Deploy the fully functional ZMUXBOS System.
- Integrate with stakeholders and 3rd parties
- Create an Integration Point for all systems.
- System Documentations handover.

2.0 Existing System Analysis

Currently, on the software side of ZMUX infrastructure, there needs to be an effective ICT-based integrated information system that can address the challenges associated with the current system, which is too manual. For example, stock control, customer relationship management, and tax payment are performed manually. Also, even though payment and airtime billing is performed electronically by an electronic billing system, the system does not offer alternative packages for different purchasing power. Moreover, the existing billing system reports an error. It cannot automatically update the CAS server during a renewal of a service subscription, which means a user does it manually, which is more time-consuming and staff demanded. Additionally, the existing billing has no API which allows integration with the government payment system (ZANMALIPO). Above all, the current system has no way to improve, so it is no longer forward. In that regard, we need a new system.

2.2 GAP Analysis

2.2.1 Not utilized unique customer identification number

The current system uses a phone number as an identification number. Because the phone number is not utilized internally in the ZMUX system, it led to many technical errors, such as the impossibility of using one phone for another device of the same customer; using the utilized Customer Identification number will lead to more flexibility for the customer record used in the ZMUXBOS.

2.2.2 Inability to Integrate with other government systems and stakeholders.

The current system does not integrate with any Government stakeholder or System. It works alone, and government mandates that we integrate with other stakeholders, such as ZanMalipo and the Zanzibar Revenue Authority (ZRA). The new ZMUXBOS must have the ability to integrate with all needed Government systems and stakeholders. Also, it must be ready to integrate with any further stakeholders that ZMUX will say so.

2.2.3 Inability to generate Report.

2.2.4 Software Crash Issues.

2.2.5 Outdated Software.

2.2.6 Lack of System database Log.

2.2.7 Inability to manage Lookups.

2.2.8 Inability to add new Business Service.

2.2.9 Staff System Management Skills.

3.0 System Requirements.

3.1 Functional Requirement.

3.2 Nonfunctional Requirement.

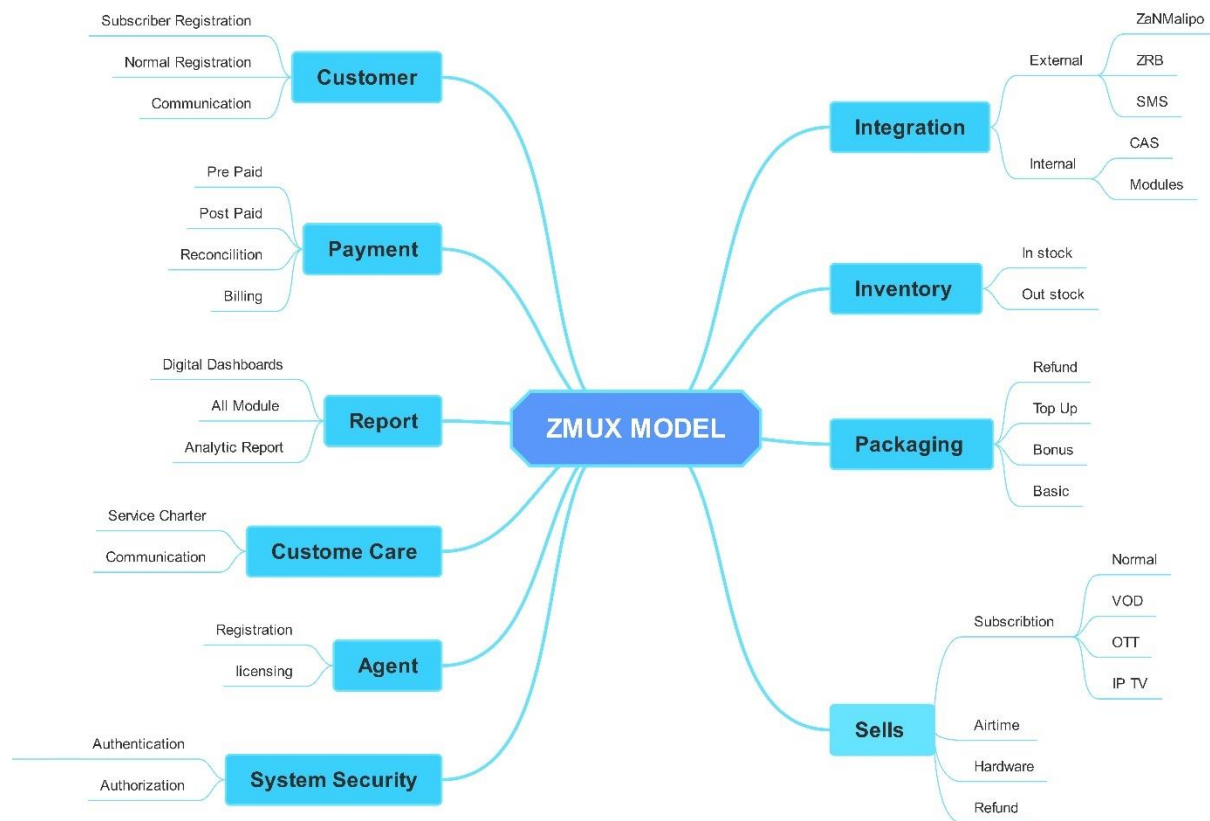
4.0 ZMUX Model and Use Case.

The upgraded ZMUX model will follow the current ZMUX model with some optimization. Optimization of the model will predominantly be brought by adaptation of technology and system; in this sense, some of the manual processes will disappear or be automated. Mind-map diagrams will be used to present the ZMUX model.

The use case flow represents the number of actors involved and granular tasks performed to accomplish a model deliverable. ZMUX use cases are established from the model. The UML case diagram in this section presents this.

4.1 ZMUX Model.

The ZMUX has ten module components. Customer, Integration, Inventory, Packaging, Sells, Payment, Agent, Customer care, System Security, and Report. The mind map diagram below illustrates ten model components of the ZMUX system, followed by an explanation of each module.



Customer: This module component deals with customer management. In ZMUXBOS, the customer presented here is Those who subscribed and will pay for the airtime and those who only buy the device and do not commit to purchasing airtime. Also, in this module, we will have the ability of the customer to communicate with us if needed.

Payment: This module component deals with payment management. In ZMOXBOS, you can have pre-paid customers or post-paid customers. Also, we manage reconciliation from other payment stakeholders and our system, and in this module, we handle all the billings.

Report: This module component deals with providing information for decision-making. The system can have all kinds of information, from customized reports, module reports, and dashboards to analytic reports.

Customer Care: This module component deals with customer care, call center staff, and their example. There will be a formal service charter for them to follow; the service charter will provide incentives as rewards and some corrective measures. The main job of this module is to handle communication of incidence in ZMUX business.

Agent: This module component deals with agent management. The agent is the customer who works as ZMUXBOS contractually sells staff and customer care. The agent is the salesperson and customer care, so they will communicate the incident in our ZMUXBOS. Also, their licenses are managed here.

System Security: This module component deals with authentication and authorization in using the system. It will be role base permission authorization.

Integration: This module component deals with authentication and authorization in using the system. It will be role base permission authorization.

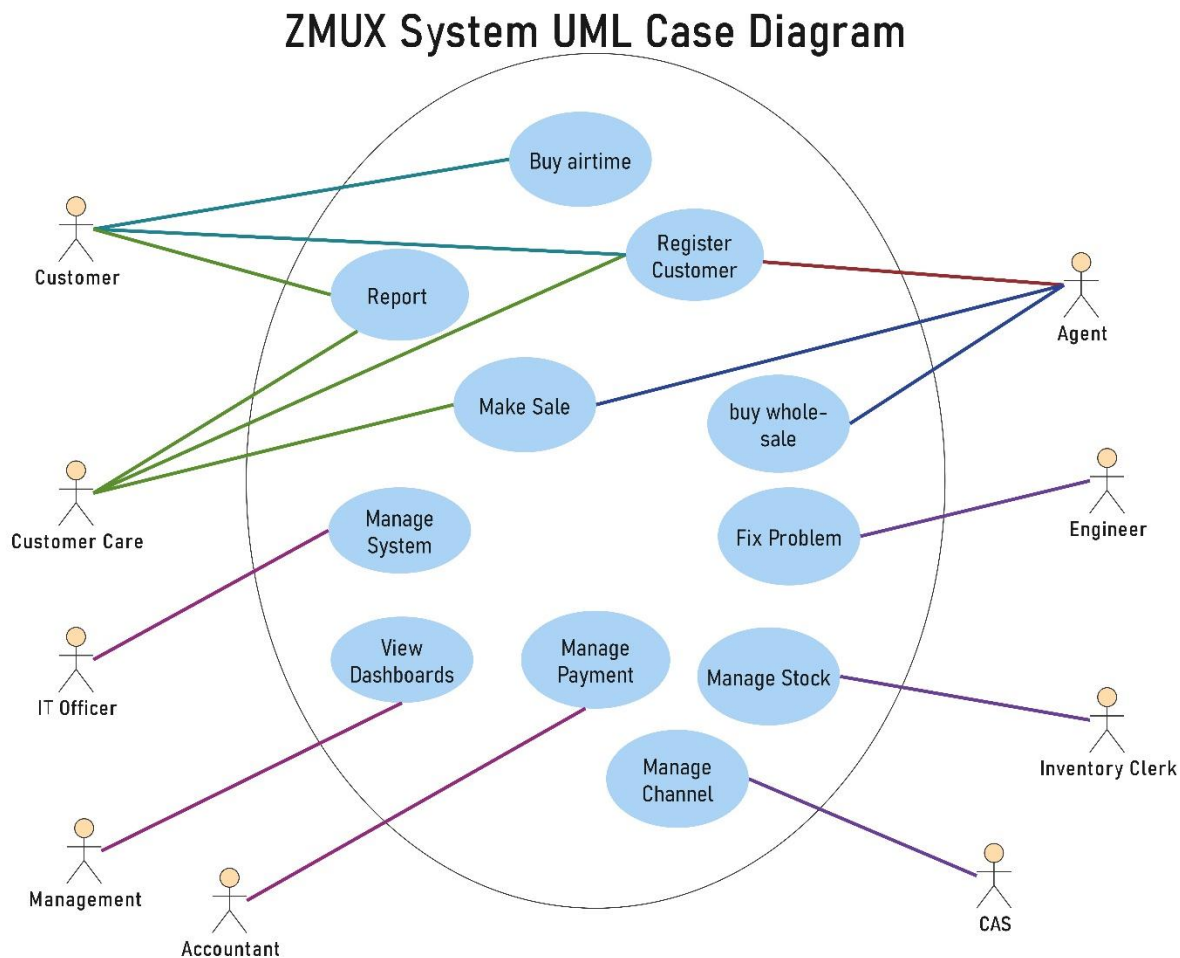
Inventory: This module component deals with storage. To manage derivable. The stock that comes in and comes out.

Packaging: This module component deals with the business packages. From the basic to the top-up algorithm and bonus algorithm, all of it is managed in this module.

Sells: This module component deals with sales. The customer and agent can buy airtime, hardware, and subscription.

3.2 ZMUX UML case diagram.

The ZMUX system has nine actors, Customer, Customer care, Accountant, Agent, Engineer, Inventory clerk, Management, IT Officer, and Conditional Access System (CAS). The UML case diagram will show the actor and activity to operate ZMUX, followed by an explanation of the action.



Buy Airtime: The subscribed customer will buy airtime using our system or MNO, and our system will detect the sales processing in CAS to manage channels.

Register Customer: Customer Care, the Agent can register a customer to do business with ZMUX. Also, customers can register themselves in a ZMUX web system.

Report: Customer and Customer care can report the problem or comment in the system. The reporting message must follow Service Level Agreement (SLA).

Make Sale: Customer Care and the Agent can sell to the customer. Customer care only can make a wholesale to the agent.

Fix Problem: After the Customer or Customer Care report a problem engineer solves it and puts a comment in our system.

Manage system: The IT Officer will register staff grants, revoke the roles, and manage the system's look-up.

Manage Payment: The accountant will manage all payment reports and reconciliation. We will have integration with many stakeholders, so this job to see that it reconciles is solely to the accountant.

Manage Stock: The inventory clerk will manage all of the derivable.

Manage channel: The CAS will manage the encryption and decryption of the system.

View Dashboards: Management will need the summary reports for decision-making.